UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,573	09/15/2003	Jang-Hyoun Youm	1572.1158	7966

21171 7590 12/02/2005

STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER	
NGUYEN, DANNY	
ART UNIT	PAPER NUMBER
2836	

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/661,573	YOUM, JANG-HYOUN	
	Examiner	Art Unit	
	Danny Nguyen	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *15-23* is/are allowed.

6)☒ Claim(s) *1-3,5,6 and 11* is/are rejected.

7)☒ Claim(s) *4,7-10,13,14 and 25-28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/15/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

1. Claim 24 is rejected under 35 U.S.C. 102(a) as being anticipated by Zhou (USPN 6,804,127). Zhou discloses a power supply device (figure 3) comprises a capacitance (40) connected in parallel with an inverter (50), a resistance (22) which limits an inrush current (col. 5, lines 13-22), an over-voltage protection circuit (e.g. 60) which selectively discharges the capacitance to limit a voltage across the capacitance through the limiting resistance to limit a voltage across the capacitance (see abstract, col. 6, lines 26-56).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3, 5, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (APA) in view of Chang (USPN 6,465,991), and Moriguchi et al (USPN 6,069,811)

Regarding claims 1-3, APA discloses a power supply device having an AC power supply (100), a rectifier (300), and a capacitor (Cdc) which smoothes power rectified

comprises a switching unit (Spfc), a diode (Dpfc) having a cathode connected to the capacitor and an anode connected to the switching unit, an inductor (Lpfc) having a first end coupled to the rectifier and a second end, a resistor (140) having a first end connected to the capacitor and a second end. APA does not disclose a relay and controller as claimed. Change discloses a power conversion circuit (figure 2) comprises a relay (200) is coupled between the inductor (204) and the diode (206). It would have been obvious to one of ordinary skill in the art at the time the invention to have modified the circuit of APA to incorporate the relay which is coupled between the inductor and the diode as disclosed by Chang in order to reduce stress over input voltage lines. However, the combination of APA and Chang do not disclose a voltage detector that detects a voltage across the capacitor as claimed. Moriguchi discloses a power converter (figure 1) comprises a voltage detector (22) that senses a voltage across a capacitor (20) and the controller turns on and off response to the voltage sensed signal. It would have been obvious to one of ordinary skill in the art at the time the invention to have modified the circuit of APA and Chang to incorporate the capacitor voltage detection circuit and the controller as disclosed by Moriguchi in order to provide protection circuits against excessive input voltages.

Regarding claims 5, 6, APA discloses a relay (142), which selectively couples the rectifier (300) with the inductor and the resistor.

3. Claims 11, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Jiang (USPN 6,043,705) in view of Moriguchi et al (USPN 6,069,811).

Regarding claims 11, 12 Jiang discloses a method of controlling a power supply device having an AC power supply, a rectifier (201-204), and a capacitor (208) which smoothes power rectified, a switching unit (206), a diode (207) having a cathode connected to the capacitor and an anode between the switching unit and the diode (e.g. figure 2) comprises providing a resistor (211) connectable in parallel with the diode (207). Jiang does not a relay which connects between the switching unit and the diode and a capacitor voltage detection circuit as claimed. Change discloses a power conversion circuit (figure 2) comprises a relay (200) is decoupled the inductor (204) and the node (node b) between the switch (202) and the diode (206). It would have been obvious to one of ordinary skill in the art at the time the invention to have modified the circuit of APA to incorporate the relay which is coupled between the inductor and the diode as disclosed by Chang in order to reduce stress over input voltage lines. However, the combination of Jiang and Chang do not disclose a voltage detector that detects a voltage across the capacitor as claimed. Moriguchi discloses a power converter (figure 1) comprises a voltage detector (22) that senses a voltage across a capacitor (20) and the controller turns on and off response to the voltage sensed signal. It would have been obvious to one of ordinary skill in the art at the time the invention to have modified the circuit of Jiang and Chang to incorporate the capacitor voltage detection circuit as disclosed by Moriguchi in order to provide protection circuits against excessive input voltages.

Allowable Subject Matter

4. 15-23 are allowed.

Claims 4, 7-10, 13, 14, 25-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

Claim 15 recites a power supply device for supplying an AC motor from a source of DC power comprises a switching unit having a first terminal connected at a node with the second end of the diode, a second terminal connected with the second end of the capacitor and a control terminal, a first relay which selectively connects the node to one of the second end of the resistor and the second end of the inductor, and a second relay which selectively connects the source of the DC power to one of the second end of the resistor and the first end of the inductor; a controller which drives the control terminal and the relays to cause the circuit to selectively perform the inrush current protection mode, the power factor correction mode or the over-voltage protection mode according to the detected value of the DC drive voltage. The references of record do not teach or suggest the aforementioned limitation, nor would it be obvious to modify those references to include such limitation.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danny Nguyen whose telephone number is (571)-272-2054. The examiner can normally be reached on Mon to Fri 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)-272-2058. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DN
11/25/2005

BRIAN SIRCUS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800